

Compositional States

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Since at least Verkuyl (1972), *aktionsart* has been considered a property of VPs minimally resulting from a combination of the verb and its internal argument. This has been demonstrated most clearly in the literature on telicity where certain verb-argument combinations allow for terminative interpretation while others permit only durative interpretation. The properties shared by nominals and events and the manner of their composition has been the source of much debate, leading to a rich literature on event composition. Left out of this debate, however, has been the role that arguments might play, if any at all, in the composition of states. One area deserving of further research is the availability of existential interpretation of subjects (EIS) in states. Fernald (1994) noted that the availability of EIS depends on the internal argument (1, 2).

(1)	a. Monkeys live in trees.	(*EIS)
	b. Tycoons own banks.	(*EIS)
(2)	a. Monkeys live in these trees.	(EIS)
	b. Tycoons own this bank.	(EIS)

Most accounts of (1) and (2) rely on discourse constraints. Kratzer and Selkirk (2007), for instance, propose that the availability of EIS is related to the requirement of a syntactically represented topic. Having quantificationally strong arguments to fill in as topics, the subject in (2) may remain low and receive existential interpretation. Weak arguments, however, cannot be topics (Jäger, 2001). With no other argument capable of being the topic, the subject in (1) must raise and becomes too high to receive existential interpretation. This analysis assumes that the weak/strong distinction between the objects in (1) and (2) accounts for the alternation, but there are other distinctions between *trees/banks* and *these trees/this bank*, and a wider range of arguments is needed to uncover the relevant distinction.

Examples (3–5) examine a wider range of arguments and demonstrate two broad classes of behavior (summarized in (6)). Statives with mass or bare plural objects completely block EIS (3). All other object types license EIS. Statives with bare numeral or weak determiner objects are generally less acceptable, though EIS is possible (4). Statives with weak quantifier, strong determiner, or strong quantifier objects are fully acceptable with EIS (5). This finding argues against the assumption that the availability of EIS in (1) and (2) results from the weak/strong distinction of objects. Instead, (3–5) make a cut around the mass/count distinction, similar to that found between atelic and telic events. States and events, then, are sensitive to the same mass/count object properties, suggesting they may be more similar than traditionally thought.

(3)	a. Monkeys live on land/in trees.	(*EIS)
	b. Tycoons own silverware/banks.	(*EIS)
(4)	a. Monkeys live in a/three tree(s).	(?EIS)
	b. Tycoons own a/two bank(s).	(?EIS)
(5)	a. Monkeys live in several/many/the/these/each tree(s).	(EIS)
	b. Tycoons own many/the/this/every bank(s).	(EIS)

(6)	Mass Noun/ Bare Plural	Bare Numerals/ Weak Determiners	Strong Determiners/ Weak-Strong Quantifiers	EIS
	Bare Plural	*EIS	?EIS	EIS

Given this similarity, I propose that state and event VPs are composed via the same mechanisms while the distinction between states and events arises from their relationship to their subjects. Event VPs, as properties of events, map subjects to event part-structures; however, state VPs, as properties of states, map states to subject part-structures. I propose that these part-structure mappings are mediated by voice heads which also introduce the subject (Kratzer, 1996). The stative voice head specifies a part-structure mapping between the temporal trace of the subject and the state (7). Assuming Kratzer's (2004) composition of VPs (which maps objects to eventualities) and the availability of stages of individuals (Carlson, 1977), the availability of EIS results from the homogeneity of the VP. When the VP is homogeneous (has a mass object), the state applies to homogeneous stages of the subject (8a). As these stages compose the individual itself, no particular spatiotemporal stage of the individual is acquired and EIS is blocked. When the VP is quantized (has a count object), the state applies to only a quantized stage of the subject (8b). This quantized stage, as a particular spatiotemporal slice of the individual, guarantees existence.

- (7) $\llbracket \text{Voice}_S \rrbracket = \lambda x \lambda s [\text{Holder}(s)(x) \& \forall s' [s' \leq s \rightarrow \exists x' [x' \leq x \& \tau(x') = \tau(s')]]]$ where x ranges over stages of individuals and s over states
- (8) a. $\llbracket \text{Tycoons own banks} \rrbracket = \lambda s [\text{Holder}(s)(\text{tycoons}) \& \forall s' [s' \leq s \rightarrow \exists y' [y' \leq \text{tycoons} \& \tau(y') = \tau(s')]] \& \text{own}(s)(\text{banks}) \& \forall x' [x' \leq \text{banks} \rightarrow \exists s' [s' \leq s \& \text{own}(s')(x')]]]$
- b. $\llbracket \text{Tycoons own this bank} \rrbracket = \lambda s [\text{Holder}(s)(\text{tycoons}) \& \forall s' [s' \leq s \rightarrow \exists y' [y' \leq \text{tycoons} \& \tau(y') = \tau(s')]] \& \text{own}(s)(\text{this-bank}) \& \forall x' [x' \leq \text{this-bank} \rightarrow \exists s' [s' \leq s \& \text{own}(s')(x')]]]$

I also argue that reference to homogeneous or quantized stages of individuals clarifies several other stage-level/individual-level phenomena, including possible temporal modification of individual-level predicates (Percus, 1997) and the triggering of lifetime implicatures (Musan, 1997).

References

Carlson, Gregory N. 1977. Reference to kinds in english. Doctoral Dissertation, University of Massachusetts, Amherst.

Fernald, Theodore B. 1994. On the nonuniformity of the individual- and stage-level effects. Doctoral Dissertation, University of California, Santa Cruz.

Jäger, Gerhard. 2001. Topic-comment structure and the contrast between stage level and individual level predicates. *Journal of Semantics* 18:83–126.

Kratzer, Angelica. 1996. Severing the external argument from its verb. In *Phrase structure and the lexicon*, ed. J. Rooryck and Laurie Zaring, 109–137. Dordrecht, Kluwer.

Kratzer, Angelica. 2004. Telicity and the meaning of objective case. In *The syntax of time*, ed. J. Guéron and J. Lecarme, 389–424. The MIT Press.

Kratzer, Angelica, and Elisabeth Selkirk. 2007. Phase theory and prosodic spellout: The case of verbs. *The Linguistic Review* 24:93–135.

Musan, Renate. 1997. Tense, predicates, and lifetime effects. *Natural Language Semantics* 5:271–301.

Percus, Orion J. 1997. Aspects of a. Doctoral Dissertation, MIT.

Verkuyl, Henk J. 1972. *The compositional nature of the aspects*. Foundations of Language Supplementary Series. Dordrecht: Reidel.